Professionalization of College Sports: The Case of College Basketball

The Honors Program
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ABSTRACT

This study examines how major college basketball programs have become professionalized, and follow a professional model in terms of their revenues, expenses, and profits. "Professionalized" is defined as having a fundamental focus on profits and revenues. Revenue and expense data for the 2006-2007 season was selected from the six major conferences: Big East, Big Ten, Big 12, ACC, PAC 10, and SEC. Data was collected from the Office of Postsecondary Education, where revenues and expenses are reported for each school. These data were examined and used to gauge whether these programs or conferences are following a professional model. In addition, the study examined the marginal revenue product of acquiring one more premium player (a player that has been drafted into the NBA or WNBA). Data were collected from NBAdraft.net, where NBA and WNBA draft classes were be used to determine the number of premium players on each college team. OLS regression analysis was be used to indicate relationships between the data. These relationships indicate that men's basketball programs follow a professional model and that the marginal revenue product of acquiring one more premium player is greater than their compensation through scholarship. Women's basketball programs do not appear to follow a professional model, or acquire players that generate significant revenues greater than their compensation through scholarship.

INTRODUCTION

It is clear that Division I athletics have evolved tremendously over the past 100 years, and have become great revenue generators for their educational institutions. Both men's basketball and football have emerged as the two largest revenue producers, as they have an abundance of TV contracts and generate crowds near the level of their respective professional organizations. These general observations have lead scholars to believe that perhaps these Division I sports have become professionalized, and operate with a fundamental focus on profit. Richard G. Sheehan (2000) made this argument in his study, "The Professionalization of College Sports". He collected data from 1994 and 1995 "gender equity reports" to analyze the revenues, expenses, and profits of basketball, football, and "other" women's and men's programs. "Other" women's and men's programs were referred to as any sport other than football and basketball. Sheehan found that both Division 1 basketball and football programs follow a professional model. One of the purposes of the present study would be to replicate his analysis, but with data from the 06-07 season. In this study, we focus on women/men's basketball exclusively.

One can make the argument that college players are in fact employees of their athletic departments and should be compensated as employees. Athletic scholarships are the current form of compensation for these athletes, and many feel that, given the cost of a college education, this compensation is more than fair. Robert W. Brown however, argues that compensation through scholarship is not nearly enough when considering the magnitude of the revenues the student brings in. In 1994 and 2000, Brown estimated that premium football players, men's and women's basketball players (players who have been drafted into the NBA or WNBA) have marginal revenue products of $500,000 and $1,000,000, and $250,000, respectively. By replicating Brown's study with data from the 06-07 season, we estimate the rents collected by athletic departments and determine if athletes are being compensated appropriately.

This study intends to determine if Division 1 major conference basketball programs follow a professional model and if these programs acquire players who generate revenue greater than their compensation through scholarship. This would be considered grounds to argue that these players are employees, and that they are not properly compensated for their services.

LITERATURE REVIEW

There are major issues in dealing with "big time" student athletes when considering their time spent as students versus their times spent as athletes at a given institution. William C. Dowling (2001) argues that schools prostitute themselves to commercialized athletics "by accepting 'special admits' and offering them phony curricula". In other words, a means to generate revenue and exposure sports programs are opening academic institutions to athletes who are not necessarily interested in gaining an education as. These "special admits" are often held to different standards than regular students and are expected to place their athletic performance at a higher priority than their academics. Dowling uses the University of Minnesota as an example of this. At Minnesota, athletic tutors were found to have "written over 400 pieces of work for 20 basketball players over a 5-year period". This was done to provide the athletes more time and fewer distractions to carry the team to the desired "March Madness" NCAA postseason tournament. Another example mentioned refers to the University of Miami's boosters paying players $500 a touchdown, "losing" positive drug test results, and steering $700,000 in government student loans to recruited athletes.

Ryan Mac and Amy Harris (2011), writers for the California Watch, took a deeper look at Stanford's treatment of student athletes. Stanford, a highly regarded academic institution, supposedly held their student athletes to the same academic standards as full-time students. Mac and Harris argue that this claim may not be consistent with what actually happens. According to many who were interviewed for Mac and Harris' article, *Stanford Athletes had Access to List of 'Easy' Classes*, there is a list of classes distributed to student athletes designed to accommodate athletes' demanding schedules. A women's soccer player at Stanford, Kira Maker, claimed that the classes on the list were "always chock full of athletes and very easy A's". The list, titled "courses of interest", was distributed by the Athletic Resource Center, where advisers in other departments were unaware that the list existed. Although "the list itself isn't a violation", according to the president of the National

Association of Academic Advisers for Athletics, Gerald Gurney, "promoting courses because they're easy isn't, ethically, something that academic advisers should do."

All of these actions are compromises that might be made by academic institutions in order to sustain a competitive Division 1A program in revenue generating sports such as football or basketball. Not only do athletic departments allow illegal and unethical acts to occur, but they are also admitting kids who would not normally be qualified to attend the school. A senior academic administrator at Tufts University pointed out this out in the Wall Street Journal when he asked the question, "Does anyone actually believe that a freshman varsity basketball player at Duke, Stanford, or Georgetown, handle a normal first year curriculum at these rigorously academic institutions?" Dowling examined statistics available in the 1997 graduation-rates report published by the NCAA and found that the average SAT score of a student entering Duke University was 1392, whereas the average for their basketball players was 887. This fact alone puts into question whether these student athletes can legitimately handle the demands of Duke University's curriculum, and how these players are able to stay eligible. Dowling feels that a few schools, such as Duke, who have commercialized their college sports programs, have legitimized what he calls "prostitution" for the (Harris & Mac, 2011)less academically prestigious schools.

Dowling argues that the way that many Division 1A schools and athletic programs are operating is by lowering the standards for college-level performance and "shifting the symbolic center of values at an institution away from the pursuit of knowledge and towards sports as a commercial spectacle." His ultimate point, which is also driven home by Andrew Zimbalist's (1999) book, *Unpaid Professionals*, is that making Division 1A athletics openly professional is the only way out of this situation. An alternative is proposed by James L. Shulman and William G. Bowen (2001) in their paper, *The Game of Life: College Sports and Educational Values*, who claim that transitioning to the Division III model where athletic scholarships are not rewarded is a way out as well. Although this outcome is unlikely, Division III schools have been able to compete athletically while maintaining their academic integrity.

As Dowling pointed out, with Division 1A athletics succumbing to the enormous profits associated with commercializing their athletes and sport, one could make an argument for paying these players. Many players are recruited with the hope that they will not only bring success to their program, but also bring attention to the school, resulting in lucrative media contracts. Some feel that because of the attention and money generated from these players, student athletes should receive monetary awards beyond their athletic scholarships from their respective programs. With the current system in place where athletes are considered amateurs, this cannot happen.

Allen Sack (2008), in his article *Should College Athletes be Paid,* conveyed his strong belief in amateurism and that student athletes should not be paid by their schools beyond their scholarships. He then goes on to address problems with the student athlete system similar with Dowling's in that Division 1A athletes are not amateurs "engaged in their sport during their free time." Sack argues that many of these athletes are essentially employees to the school and are the main contributors to the building of a "sports entertainment empire". In this case, Sack feels that certain players should receive other forms of rewards for the benefits that the school reaps from their hard work. He states that the NCAA has devised a payment system, athletic scholarships, which provide a "cheap and steady supply of blue-chip athletes" for the fast-growing business of collegiate sports, as well as giving coaches control over athletes similar to what an employer has over its employees. Sack states that student athletes are not compensated appropriately and should have similar benefits to what employees would have. Sack feels that these benefits should include "medical benefits, workers' compensation when injured, and the right to use their God-given talents to build some financial security for their families while still in college". In addition to this, athletes should have players' associations to bargain for their ability to "endorse products, accept pay for speaking engagements, and get a cut of the profits universities make by marketing their images." Sack feels that these actions are reasonable and necessary for the players who drive much of the revenue that keep athletic programs afloat.

In his article, *The NCAA's Slaves*, Andrew Cline (2009) expressed that Division 1A student athletes are exploited by the NCAA and receive none of the money and school recognition that they generate. Cline stems much of his analysis on CBS's agreement to pay the NCAA $6 billion from 2002-2013 for rights to broadcast the NCAA men's basketball tournament. Each school that appears in the final game takes home a million dollars, and each also has the ability to generate millions from sales of licensed products and contracts with sporting goods suppliers. The point Cline makes is that none of the athletes receive any of that money they collectively helped produce. He claims that this practice can be best described as a "modern form of slavery". He stresses that the athletes on these teams sign over their rights to profit financially from their own hard work.

While Sack and Dowling point out that there are an extremely small percentage of players who are the main revenue generators, Cline would argue that the entire team should be recognized as well. According to NCAA data, 1.2% of the nation's men's basketball players will go on to play professionally. With 68 teams that make the NCAA tournament, each allowing 13 scholarships, there are a total of 884 players who are showcased. Cline assumes a similar percentage of this population will make it professionally, meaning that more than 850 players will never earn anything from their efforts. Meanwhile, the NCAA, its member institutions, and athletic conferences will earn billions. The NCAA, as well as many others opposed to payment for play, claim that the players receive something worth more than cash. Cline feels that if you were to monetize the value of an education it would worth roughly $100,000, which is the cost of the average state school taking into account out-of-state and in-state students. Cline used a North Carolina basketball player, Tyler Hansborough, as an example and thought it reasonable to claim that his share of television royalties, jersey, poster and t-shirt sales, etc. would be significantly larger than his payment of $100,000 through scholarship.

When considering the NCAA constitution and its rules, Cline finds numerous troubling components. Rule 12.4.4 states "A student-athlete may establish his or her own business, provided the student-athlete's name, photograph, appearance or athletics reputation are not used to promote the business." Cline finds it unfair that the NCAA would be able to launch its own photo store online, where people could purchase a picture of a player, and not have to share any profit with that player. Schools all over the country have stores that sell these types of merchandise, while the players receive none of the profit. The last point Cline makes is based on the NCAA constitution statement that reads "student-athletes should be protected from exploitation by professional and commercial enterprises." He finds it interesting that the NCAA constitution never addresses exploitation by non-profit enterprises, which he feels is exactly what the NCAA is doing.

In their article, *USA Today Analysis Finds $120K Value in Men's Basketball Scholarship,* Jay Weiner and Steve Berkowitz (2011) offer an estimate, much larger than Cline's, of what a typical basketball player in Division I receives yearly. Rather than taking the average of a state school's tuition and room and board to value a player's scholarship, they quantify other factors to be taken into account. These factors include coaching, general administrative support, equipment, uniforms, marketing, promotion, game tickets, medical and insurance premiums, and future earnings power. When all of these factors are taken into account, Weiner and Berkowitz estimate that a Division I men's basketball player receives roughly $120,000 per year in value, a much larger estimate than Cline's $25,000.

Mark Isenberg (2010) gives his own take on payment of student athletes in his article, *NCAA Should Admit Its March Madness Players Are Professionals,* which is consistent with both Cline and Sack's thoughts. Isenberg views the issue as being caused by a very small percentage of players. The revenue generating sports, football and basketball, only make up 3% of all student athletes in the NCAA. In addition, an even smaller percentage of that population will end up making it professionally and are who drive most of the revenues for the school. It's these players that Isenberg stresses are what create the dilemma of payment for play. He feels that high profile athletes are part of a strictly business arrangement, where the school provides a showcase for the player's talents while the player provides his athletic and marketing services. Isenberg explores ways to possibly minimize these types of players by implementing rules. One feasible rule he proposes is to mandate at least three semesters of good academic standing before being eligible to play. This rule, he believes, would help to filter out those who have no interest in academics, also referred to as "one and dones". While this idea seems great, Isenberg realizes the economic incentives of attracting superstars who happen to be disinterested in academics is too great to be overcome by the implementation of rules. He feels that athletic directors, coaches, and athletes themselves will continue to "game" the system no matter what. Isenberg's solution to the problem is consistent with Cline and Sack's in that big-time basketball and football should admit they are professional, and allow for players to receive money in addition to their scholarship. He believes that compensating student athletes through the schools themselves may not be feasible, but allowing for them to market their own names and images may be. This would require the removal of amateur status from these athletes, which is a very bold step. Isenberg stresses this as the only solution to a very complicated problem. With this system in place, those who have already created a brand for themselves through their play will be able to reap the benefits of that.

Dowling, Sack, Cline, and Isenberg all share the opinion in some form or another that big-time athletics, specifically basketball and football, are becoming professional. Richard G. Sheehan (2000) conducted a study looking to break down this issue quantitatively to see which Division 1A sports are in fact professional. His main argument for whether or not a sport is professional was based on the athletic department's fundamental focus. If the athletic department's fundamental focus was on profits, then it operated professionally. If its fundamental focus was not for profit, then it didn't operate professionally. Sheehan collected data from 1994 and 1995 "gender equity reports" to analyze the revenues, expenses, and profits of basketball, football, and other women's/men's programs. He compared data by conference and by division and concluded the only profitable sports were Division 1A men's basketball and football. The fact that these sports were profitable alone does not yet imply that their fundamental focus was profit. In order to dig deeper into the numbers, Sheehan ran a least squares regression of expenditures versus revenues in order to gauge whether the program is spending to generate profit. Running the regression with data from individual institutions yielded results of a $.66 increase in revenues for every dollar spent on football. This implies that football may not be spending to generate profit. When the regression was run with data by conference, the results yielded a much higher dollar increase of $3.02. This would imply an obvious economic incentive to increase spending, but this appears questionable considering the contrasting results from data by institution. Men's basketball produced similar results for both the individual and by conference regression of expenses and revenues. By individual institutions, every dollar spent generates $2.04 in revenue, and by conference, every dollar spent generates $3.12 in revenue. Therefore, it seems that men's basketball programs are spending in pursuit of profit.

In addition to regressing revenues and expenses of football and men's basketball, Sheehan chose to regress football gross revenue versus other men's and women's expenditures as well as men's basketball by individual institution and conference. The results for individual institutions showed that an increase in football gross revenue leads to statistically significant increase in expenditures for other men's and women's programs. More specifically, a dollar increase in football gross revenue resulted in a $.04 increase for other men's sports and a $.07 increase in women's expenditures. There was no impact on men's basketball expenditures. These results show that money made in football is being used to subsidize other men's and women's sports. This presents yet another incentive to make a profit in football. In this case, operating professionally in football allows for the rest of the athletic department to stay afloat. This relates back to Sack's point that these athletes are those keeping their school's athletic programs in existence. Unfortunately, Sheehan did not perform the same regression for men's basketball concerning subsidization. Despite this, Sheehan concludes that both collegiate football and men's basketball fit a professional mode, while others do not.

Robert W. Brown and R. Todd Jewell (2004) take this idea a step further by assessing the value of football and men's basketball players. Brown and Jewell's attempt to evaluate the actual amount of money generated by these revenue generating players and compare that to the value of an athletic scholarship. If the amount of money generated per player is greater than the value of their athletic scholarship, it would imply that the athlete is not being compensated adequately. This idea is relevant to Cline's belief that premium players generate revenues much larger than their average estimated scholarship of $100,000. Brown and Jewell accomplished this by measuring the marginal revenue product (MRP) of acquiring one premium football or men's basketball player, while holding constant other factors that influence revenues through the use of Poisson regression. This study was done as an updated replication to one done previously that used 1988-1989 revenues and 1989-1992 draft data. The study found that the MRP of a premium football player exceeds $500,000 in annual revenues, where the MRP of a premium men's basketball player is approximately $1,000,000 in annual revenues. These results implied that the NCAA and the schools do not properly compensate some players for their services. Brown and Jewell used 1995-1996 revenues and 1996-1999 draft data to perform their updated version of the study. Their results were similar where the MRP of a premium football player was roughly $400,000 and the MRP of a premium men's basketball player was approximately $1,000,000. Therefore, Brown and Jewell were able to verify previous findings with more extensive and up-to-date data. This study could help support Cline's claim that Tyler Hansborough, a North Carolina men's basketball player, was not compensated as he should have been, where you could argue roughly $900,000 was extracted from him per year.

Brown and Jewell have continued to measure the rents collected by college athletic programs not only from men's college basketball and football, but women's college basketball as well. In 2006, they conducted a study measuring these rents for only women's college using ordinary least squares regression and quantile regression. Brown and Jewell followed the same methodology as they did in their previous studies in terms of the explanatory and result variables. In other words, Brown and Jewell inferred from their previous studies that a women's college basketball team's revenues are a function of its players' skill levels, the quality of its opponents, its market demand characteristics, and its past success. When using ordinary least squares regression to explain the relationship, they estimated that acquiring one premium player generated $250,000 annually for their team. Although this is much less than what they estimated for a men's college basketball player, it is still significant when considering how much they receive in scholarship money. This would infer that college athletic programs are collecting over $150,000 a year in revenue from these premium players. Brown and Jewell came up with different results when using quantile regression to explain the relationship. They felt that this form of regression had two advantages over ordinary least squares regression. The first advantage is that quantile regression estimators are efficient in the presence of outliers, while OLS estimators are not. The second is that quantile regression allows for analyzing different parts of the conditional distribution of team revenue, where OLS regression concentrates only on the conditional mean. Therefore, quantile regression gave Brown and Jewell the ability to estimate the marginal value of a premium player depending on where their team fell in the revenue distribution. The results of the quantile regression showed that the magnitude of the rents depend on a team's location in the revenue distribution. More specifically, teams falling on the lower end of the revenue distribution extract little or no rents, while teams falling on the upper end of the revenue distribution (elite programs) extract sizable rents from premium players. Overall, Brown and Jewell were able to conclude that female basketball players generate much less revenue than their male counterparts. The average men's basketball team produces five times the revenues of a women's team, while premium men's basketball players generate two and a half times the revenues of women players at even the most elite programs.

The MRP of acquiring a premium player is also referred to by Lawrence M. Khan (2007) as the player's market value. Khan explains that the difference between the compensation an athlete receives through scholarship and their market value is the rent that the athletic departments are collecting. The purpose of his work, *Cartel Behavior and Amateurism in College Sports*, was to examine how this discrepancy between market value and compensation is possible. Khan uses Brown and Jewell's estimation of MRP above as basis for the discrepancy. He feels that this assumed discrepancy is due to the NCAA acting as a cartel. More specifically, the NCAA has "enforced collusive restrictions on payments for factors of production, including player compensation, recruiting expenses, and assistant coaches' salaries", and also "restricted output", to "defeat potential rival groups." He notes that of all of these restricted inputs, restrictions on payments to players are the most important way that the NCAA restricts competition. In limiting the payment to athletes, it allows for athletic departments to turn a profit and disperse the earned rents elsewhere. Rents are usually spent on "facilities, nonrevenue sports, and, possibly, head coaches' salaries." Khan feels that reinvesting into the athletic department has indirect benefits its respective academic institution. The benefits he mentions include public and private contributions as well as a generated interest from students, which in turn strengthens the school as a whole.

Khan stresses that although the NCAA's compensation restrictions on top notch players in men's football and basketball are allowing for athletic departments to collect the rents they generate, the restrictions may make the most sense. He lays out several complicating factors that he feels deserve consideration for this viewpoint. The first is that not only are the players receiving direct compensation through scholarship, they are also getting indirect benefits such as access to high level coaching, training, media exposure, which enhances their future earning power. If the cost of providing these indirect benefits is equal to or exceeds the marginal revenue product a premium player generates, then the current compensation system appears to be appropriate. With that said, Khan still feels that this is unlikely and these indirect costs do not reach the necessary levels to make this argument convincing. Another factor that Khan mentions is that the competition that would arise from paying top college athletes would be wasteful from society's point of view. In other words, devoting resources to other university activities may be more beneficial overall. The validity of this argument depends heavily on the fans' demand for relative or absolute playing quality. Demand for relative playing quality would allow for inefficiently high demand for inputs to playing quality, assuming competition was uncontrolled. A third consideration Khan includes in his paper is whether the restrictions on paying top college athletes cause inefficiency when looking at the labor supply curve. If the supply curve happens to be perfectly inelastic (playing college sports is the player's best use of time by a significant margin), then there would be no efficiency loss in restricting pay. More realistically, the supply curve is elastic to some extent, which implies an efficiency loss when restricting inputs (payment to athletes). Players are likely to consider other options like turning pro or playing overseas when their compensation is restricted. Therefore, there appears to be efficiency loss when considering the labor supply curve. The last point Khan brings up is that the demand for amateur college sports may be much higher than the demand for professionalized college sports. Therefore, restricting pay and keeping the sport amateur may be in the best interest of the NCAA. While all of these arguments are worth noting, none are supported by evidence.

METHODOLOGY

After examining previous research it appears evident that major Division 1A college basketball programs generate large sums of money, and because of this, have a clear incentive to strive for athletic success. Programs are spending large sums of money, doing whatever they can to acquire desired players, and building their teams in a fashion that will generate the most money. Many argue that this would be considered grounds for labeling these athletic programs as professional.

Part one of the present study replicates a study conducted by Richard G. Sheehan, which aimed to determine whether Division 1 sports followed a professional model. His definition of a program following a professional model was one that had a “fundamental focus on profits.” In order to test whether or not programs had a fundamental focus on profits, he collected revenue, expense, and profit data from 1994 and 1995 “gender equity reports”. There are two specific relationships that Sheehan looked at that are in focus in the present study: increasing expenditures vs. increasing revenues, and increasing revenues for women/men’s basketball vs. increasing expenditures for other women’s and men’s sports. Other men’s and women’s sports refers to all sports other than basketball and football. These relationships were examined using updated expense, revenue, and profit data from the 06-07 season for Division 1A basketball athletic programs in the Big East, Big 12, Big Ten, ACC, PAC 10, and SEC. There are a total of 72 institutions included in the study. Below is a summary table of the data used for this part of the study:

	Mean	Minimum	Maximum	Standard Deviation
Revenues Men's Team	7,983,838.31	1,973,099	23,216,728	4,143,244.82
Revenues Women's Team	865,567.26	16,798	4,842,823	935,965.42
Expenses Men's Team	4,544,004.86	2,058,038	9,204,755	1,518,565.91
Expenses Women's Team	2,387,442.50	1,343,766	5,162,772	786,655.32
Combined Revenues	8,849,405.57	2,212,056	23,332,349	4,214,141.54
Combined Expenses	6,931,447.36	3,542,707	11,643,069	2,041,249.06
Other Expenses	11,202,864.08	4,130,787	23,947,803	4,337,597.70

The data was taken from The Office of Postsecondary Education web site, where revenue and expense data can be found for each institution. Ordinary least squares regression was used to determine statistical significance (95% confidence interval) with each relationship. In regards to the first relationship listed, if a men's and women's basketball program is generating more than a dollar of revenue for each dollar spent, then it implies that the program is spending to make profit. The second relationship will reveal how much money is being spent on other men's and women's sports for every dollar in revenue for men's and women's basketball. This indicates how much men's basketball subsidizes other men's and women's sports. Statistical significance in either or both relationship would imply that these programs conform to a professional model, on the grounds that their fundamental focus is profit. Below are two tables summarizing the regression results for both relationships for men's and women's alone as well as combined:

Expenditures vs. Revenues

	Men	Women	Combined
Coefficient	1.57	0.66	1.17
T-Statistic	5.88	5.54	5.77
P-Value	1.27 E -7	5.00 E -7	2.01 E -7

Expenditures vs. Revenues regression shows us that every dollar spent on men's basketball results in a $1.57 increase in revenues, which implies that men's basketball programs are spending to make profit. This figure is significant at the 99% confidence interval, as evidenced by its t-statistic of 5.88 and p-value near zero. The table also indicates that a dollar spent on women's basketball results in a $.66 increase in revenue, implying that women's basketball programs do not spend to make profit. This figure is also significant at the 99% confidence interval, with a t-statistic and p-value very close to the men's results. The combined results tell us that college basketball overall generates $1.17 in revenue for every dollar spent. This figure is significant at the 99% confidence interval as its t-statistic and p-value were also very close to the women's and men's results, implying that college basketball spends to make profit.

Revenues vs. "Other Sports" Expenditures

	Men	Women	Combined
Coefficient	0.20	0.22	0.20
T-Statistic	1.63	0.40	1.69
P-Value	0.11	0.69	0.09

Revenues vs. "Other Sports" Expenditures regression shows that every dollar made in men's basketball results in a $.20 increase in expenditures for "other sports". This figure is not statistically significant, which implies that men's basketball likely doesn't subsidize other sports. The table also shows that every dollar made in women's basketball results in a $.22 increase in expenditures for "other sports". This figure is not statistically significant, implying that women's basketball as well does not subsidize other sports. The combined results tell us that every dollar made in college basketball results in a $.20 increase in expenditures for "other sports". This figure is statistically significant as its t-statistic of 1.69 and p-value of .09 indicate significance at the 90% confidence interval, implying that college basketball does subsidize other sports. The combined results should be interpreted with caution.

The second part of the study replicates a study done by Robert W. Brown and Todd Jewell, who provided the first econometric estimates of rents generated by college athletes. He concluded that both premium football and basketball players have marginal revenue products of $500,000 and $1,000,000, respectively. This was done by collecting revenue data by school and conference for the 1995-1996 season, number of premium players using NBA and NFL draft data from 1996, 1997, 1998, and 1999, state populations, metropolitan statistical area (MSA) populations, and average AP poll rankings by team for the 1995-1996, 1994-1995, and 1993-1994 seasons. A premium player is classified as someone eventually drafted into the NBA or NFL. Below is a table summarizing the data used for this part of the study:

	Average	Minimum	Maximum	Standard Deviation
Revenues Men's Team	7,983,838.31	1973099.0	23,216,728	4,143,244.82
Revenues Women's Team	865,567.26	16,798.00	4,842,823	935,965.42
Combined Revenues	8,849,405.57	2,212,056.00	23,332,349	4,214,141.54
# of Premium Mens Players	1.44	0	6	1.49
# of Premium Womens Players	1.60	0	7	1.80
State Population	10,329,536.65	1,053,209.00	36,961,664	8,823,494.66
Average Ranking Women	4.06	0	25	6.28
Average Ranking Men	3.89	0	20	5.24
MSA	2,730,355.61	82,605.00	19,069,796	4,513,311.82

A two-stage Poisson regression model was considered when deciding which type of model would best suit the data set. Stefany Coxe, Stephen West, and Leona Aiken (2009) wrote about the advantages of using Poisson regression over OLS regression when dealing with count data in their paper, *The Analysis of Count Data: A Gentle Introduction to Poisson Regression and Its Alternatives*. They explained that count variables take on discrete values such as zero or positive integers. The data should reflect the number of occurrences of an event in a fixed period of time. In the case of this study, the number of premium players is a count variable and can only be zero or a positive integer. The authors suggest that using a count variable as a predictor in OLS regression can result in a very unstable model if the variance of the data set is very small. The variance was quite small for men's and women's basketball. The number of premium players on a team can't be larger than its full roster for the year, and that number can't be larger than 15. Therefore, it makes sense that this model could be used for the study. However, the results were not substantially different from the OLS regressions, so we present the OLS results. Below is the OLS regression model that was used to determine the marginal revenue product of quality players:

$$Revenue_i = \alpha + \gamma_1 SMA_i + \gamma_2 QP_i + \gamma_3 Rank_i + \gamma_4 ACC_i + \gamma_5 BIGE_i + \gamma_6 BIG10_i + \gamma_7 PAC10\quad i + \gamma_8 SEC_i + \epsilon_i$$

Where: Revenue = the total basketball revenue reported by the school

SMA= the population of the Standard Metropolitan Area in which the school is located,

QP = The number of players on the team drafted by the NBA or WNBA

Rank = Average rank in the past three years

ACC = Indicator variable taking on the value of 1 if the team school is in the Atlantic Coast Conference, and 0 otherwise

BIGE = Indicator variable taking on the value of 1 if the team school is in the Big East Conference, and 0 otherwise

BIG10 = Indicator variable taking on the value of 1 if the team school is in the Big 10 Conference, and 0 otherwise

BIG12 = Indicator variable taking on the value of 1 if the team school is in the Big 12 Conference, and 0 otherwise

SEC= Indicator variable taking on the value of 1 if the team school is in the Southeast Conference, and 0 otherwise

and ε is a white noise error term with a mean of zero.

We estimate the regressions separately for men and women, and also estimate a combined model of:

$$\begin{aligned} Revenue_i = \alpha + \gamma_1 SMA_i + \gamma_2 QP_i + \gamma_3 Rank_i + \gamma_4 ACC_i + \gamma_5 BIGE_i + \gamma_6 BIG10_i \\ + \gamma_7 PAC10 \quad i + \gamma_8 SEC_i + \gamma_9 Gender_i + \gamma_{10} Gender * QP_i \\ + \gamma_{11} Gender * Rank_i + \epsilon_i \end{aligned}$$

Where Gender takes on the value of 1 if female, and 0. The combined model holds population and conference effects constant for both men's and women's programs but allows the slope and intercept to differ.

NBA and WNBA draft data from 2007, 2008, 2009, and 2010, state populations, MSA populations, and average AP poll rankings by team for the 2006-2007, 2005-2006, and 2004-2005 seasons were gathered and regressed against revenues by team were for the 2006-2007 season . With this information, the model provided a reasonable up-to-date estimate of the rents generated by men's and women's basketball players per year. This metric is regarded to as the marginal revenue product of acquiring one premium player. If the marginal revenue product is much larger than their compensation through scholarship, then there is good reason to argue that these players should be compensated with at least a share of that extra revenue they brought in. Below is the regression summary for men's only data.

SUMMARY OUTPUT

Men Only-OLS Results

Regression Statistics	
Multiple R	0.633956783
R Square	0.401901203
Adjusted R Squa	0.325952149
Standard Error	3401621.287
Observations	72

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	8	4.89845E+14	6.12E+13	5.291721	4.34547E-05
Residual	63	7.28975E+14	1.16E+13		
Total	71	1.21882E+15			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	5,420,014.86	1,059,635.55	5.11	0.00	3,302,502.20	7,537,527.53	3,302,502.20	7,537,527.53
SMA	(123,366.56)	102,423.66	(1.20)	0.23	(328,043.92)	81,310.79	(328,043.92)	81,310.79
QP	713,643.94	338,778.76	2.11	0.04	36,648.62	1,390,639.25	36,648.62	1,390,639.25
Rank	292,931.93	94,953.17	3.09	0.00	103,183.17	482,680.69	103,183.17	482,680.69
ACC	960,219.78	1,439,935.51	0.67	0.51	(1,917,261.70)	3,837,701.26	(1,917,261.70)	3,837,701.26
BIGE	298,099.24	1,415,610.54	0.21	0.83	(2,530,772.66)	3,126,971.15	(2,530,772.66)	3,126,971.15
BIG10	3,542,314.80	1,440,671.55	2.46	0.02	663,362.46	6,421,267.14	663,362.46	6,421,267.14
PAC10	(669,747.10)	1,576,919.71	(0.42)	0.67	(3,820,969.66)	2,481,475.47	(3,820,969.66)	2,481,475.47
SEC	417,435.75	1,405,192.46	0.30	0.77	(2,390,617.28)	3,225,488.78	(2,390,617.28)	3,225,488.78

The regression summary above highlights that the number of quality players, average rank, and the Big 10 conference, are all significant predictors of revenue at the 95% confidence interval. Every quality player that a men's basketball program adds generates roughly an additional $710,000. For every one ranking a men's basketball program ascends, an additional $290,000 is generated. The coefficient for the Big 10 tells us that a basketball program in the Big 10 generates on average an additional $3,500,000 in revenue. The following table indicates the amount of money each conference generates without any premium men's players, and the amount of money generated by each non-quality or non-premium men's player.

Conference	*# of Schools*	*QP*	*No QP$*	*$/NQP*
Big 12	12.00	14.00	5,420,014.86	416,924.22
ACC	11.00	20.00	6,380,234.64	490,787.28
Big E	16.00	22.00	5,718,114.11	439,854.93
Big 10	11.00	8.00	8,962,329.66	689,409.97
PAC 10	10.00	24.00	4,750,267.76	365,405.21
SEC	12.00	16.00	5,837,450.61	449,034.66

The numbers in the "No QP$" column are estimated team revenues brought in by conference assuming that no premium players were on the team. The following column, "$/NQP" is the MRP for each non-premium men's player in that conference. These estimates indicate that non-premium men's players generate significant amounts of money for their programs. The same analysis was conducted for women's only data. The table below shows the regression results.

Women Only-OLS Results

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.494274143
R Square	0.244306928
Adjusted R Square	0.148345903
Standard Error	863756.6908
Observations	72

ANOVA

	df	SS	MS	F	Significance F
Regression	8	1.5195E+13	1.9E+12	2.545897	0.018044931
Residual	63	4.7003E+13	7.46E+11		
Total	71	6.2198E+13			

	Coefficients	tandard Erro	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	900,636.95	274,894.97	3.28	0.00	351,303.20	1,449,970.70	351,303.20	1,449,970.70
SMA	44,181.82	26,764.89	1.65	0.10	(9,303.54)	97,667.18	(9,303.54)	97,667.18
QP	(49,813.06)	105,338.62	(0.47)	0.64	(260,315.48)	160,689.37	(260,315.48)	160,689.37
Rank	73,029.57	29,576.99	2.47	0.02	13,924.68	132,134.47	13,924.68	132,134.47
ACC	(526,026.15)	368,448.89	(1.43)	0.16	(1,262,312.49)	210,260.20	(1,262,312.49)	210,260.20
BIGE	(340,314.32)	369,669.78	(0.92)	0.36	(1,079,040.42)	398,411.78	(1,079,040.42)	398,411.78
BIG10	(354,840.91)	371,197.88	(0.96)	0.34	(1,096,620.68)	386,938.86	(1,096,620.68)	386,938.86
PAC10	(646,982.21)	385,735.97	(1.68)	0.10	(1,417,814.02)	123,849.61	(1,417,814.02)	123,849.61
SEC	(437,174.17)	361,654.82	(1.21)	0.23	(1,159,883.64)	285,535.30	(1,159,883.64)	285,535.30

The regression summary for women's only data shows us that only average rank for the past three seasons is a significant predictor of revenue at the 95% confidence interval. In other words, for every ranking a women's program ascends, an additional $70,000 is generated. The following table shows the amount of money each conference generates without any premium women's players, and the amount of money generated by each non-quality or non-premium women's player.

Conference	*# of Schools*	*QP*	*No QP$*	*$/NQP*
Big 12	12.00	14.00	900,636.95	60,042.46
ACC	11.00	20.00	374,610.81	24,974.05
Big E	16.00	22.00	560,322.64	37,354.84
Big 10	11.00	8.00	545,796.04	36,386.40
PAC 10	10.00	24.00	253,654.75	16,910.32
SEC	12.00	16.00	463,462.79	30,897.52

The numbers in the "No QP$" column are estimated team revenues brought in by conference assuming that no premium women's players were on the team. The following column, "$/NQP", is the MRP for each non-premium women's player in that conference. These estimates indicate that non-premium women's players do not generate significant amounts of money for their programs. The same analysis was conducted for men's and women's data combined. The table below shows the regression results.

SUMMARY OUTPUT

Combined-OLS

Regression Statistics	
Multiple R	0.851198482
R Square	0.724538856
Adjusted R Squa	0.70158376
Standard Error	2545558.742
Observations	144

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	11	2.24979E+15	2.05E+14	31.56331	9.41812E-32
Residual	132	8.55343E+14	6.48E+12		
Total	143	3.10513E+15			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	5,772,987.34	639,764.82	9.02	0.00	4,507,469.31	7,038,505.38	4,507,469.31	7,038,505.38
SMA	(33,780.76)	54,843.42	(0.62)	0.54	(142,266.47)	74,704.94	(142,266.47)	74,704.94
QP	564,379.03	240,579.87	2.35	0.02	88,488.27	1,040,269.78	88,488.27	1,040,269.78
Rank	329,848.15	68,034.94	4.85	0.00	195,268.32	464,427.98	195,268.32	464,427.98
ACC	269,323.26	763,611.84	0.35	0.72	(1,241,176.40)	1,779,822.93	(1,241,176.40)	1,779,822.93
BIGE	(50,368.01)	758,277.97	(0.07)	0.95	(1,550,316.77)	1,449,580.75	(1,550,316.77)	1,449,580.75
BIG10	1,584,653.16	767,554.09	2.06	0.04	66,355.33	3,102,951.00	66,355.33	3,102,951.00
PAC10	(546,314.15)	816,360.79	(0.67)	0.50	(2,161,156.45)	1,068,528.16	(2,161,156.45)	1,068,528.16
SEC	53,870.71	747,459.59	0.07	0.94	(1,424,678.22)	1,532,419.64	(1,424,678.22)	1,532,419.64
Gender	(5,269,373.28)	597,578.96	(8.82)	0.00	(6,451,443.51)	(4,087,303.04)	(6,451,443.51)	(4,087,303.04)
Gend*QP	(639,887.19)	370,549.35	(1.73)	0.09	(1,372,870.42)	93,096.03	(1,372,870.42)	93,096.03
Gend*Rank	(238,892.16)	103,311.56	(2.31)	0.02	(443,252.63)	(34,531.69)	(443,252.63)	(34,531.69)

The combined data regression summary above tells us that the number of quality players, average rank, Big 10 Conference, gender, and the cross products of gender and number of quality players and average rank are all significant. This tells us that number of men's quality players, average rank, and the Big 10 are significant predictors of revenue, reinforcing the men's only results due to its larger sample size. Gender and the cross products indicate the impact on revenue for women's only results. The cross product of gender and quality players contradicts the women's only results in that it tells us that number of quality players is a significant predictor of team revenues. The cross product of gender and average rank reinforces the women's only results.

Together, both parts of the study intends to find statistical significance implying that Division I major conference basketball programs follow a professional model and that these programs acquire players who generate revenue greater than their compensation through scholarship. This would be considered grounds to argue that these players are employees seeing that they work for a professional organization, and that they are not properly compensated for their services.

RESULTS AND OBSERVATIONS

After completing the statistical analysis using data collected for both men's and women's basketball from the 2006-07 season, there were findings similar to Sheehan's professionalism study as well as Brown and Jewell's marginal revenue product study . Ordinary Least Squares regression was the main model used for the entirety of the present study. OLS regression was used to assess the issue of professionalism in terms of spending money to profit, where men's and women's basketball expenses were regressed against their revenues. Men's and women's basketball revenues were also regressed against "other" men's and women's expenses to examine the issue of professionalism in terms of subsidizing other sports as well. In addition, OLS regression was used to determine the impact of premium players, statistical metropolitan area population, and average rank, on total revenue generated for a given academic institution. Analysis was conducted with data for men's and women's basketball separately as well as combined.

Expenditures vs. Revenues (Men)

Men's college basketball data alone offered observations comparable to Sheehan's in that a dollar increase in expenses resulted in more than a dollar increase in revenues. Sheehan's study in 2000 showed that a dollar increase in expenses resulted in a \$2.04 increase in revenues, and was significant at the 99% confidence interval. The present study showed that a dollar increase in expenses resulted in a \$1.57 increase in revenues. This relationship yielded a t-statistic of 5.88 and a p-value of nearly zero, which implies significance at the 99% confidence interval. The difference of roughly \$.50 from the present study to Sheehan's could possibly be explained by having more schools competing for the same dollars.

Expenditures vs. Revenues (Women)

Women's college basketball data yielded results similar to those of Sheehan's in that a dollar increase in expenses resulted in less than a dollar increase in revenues. Sheehan's study showed that a dollar increase in expenses resulted in a $.35 increase in revenues. The present study showed that a dollar increase in expenses resulted in a $.66 increase in revenues. This relationship yielded a t-statistic of 5.54 and a p-value of nearly zero, which implies significance at the 99% confidence interval. Although a dollar spent for women's basketball doesn't generate more than a dollar in revenue, the much higher updated estimate may indicate that women's basketball is becoming more professional.

<u>Expenditures vs. Revenues (Combined)</u>
The combined data for college basketball showed a dollar increase in expenses resulted in a $1.17 increase in revenues. This relationship yielded a t-statistic of 5.77 and a p-value of nearly zero, which implies significance at the 99% confidence interval.

<u>Men's Revenues vs. "Other" Expenditures</u>
Men's college basketball data showed that a dollar increase in revenues resulted in a $.20 increase in "other" men's and women's expenditures. This relationship yielded a t-statistic of 1.63 and a p-value of .11, which implies that its significance falls just outside the 90% confidence interval.

<u>Women's Revenues vs. "Other" Expenditures</u>
Women's college basketball data showed that a dollar increase in revenues resulted in a $.22 increase in "other" men's and women's expenditures. The relationship yielded a t-statistic of .40 and a p-value of .69, which implies that there is no significance to this relationship.

<u>Combined Revenues vs. "Other" Expenditures</u>
The combined data for college basketball showed a dollar increase in revenues resulted in a $.20 increase in "other" men's and women's expenditures. The relationship yielded a t-statistic of 1.69 and a p-value of .09, which implies significance at the 90% confidence interval.

<u>Marginal Revenue Product (Men)</u>
Men's college basketball data alone yielded results comparable to Brown and Jewell's in that the number of premium players was a significant predicting variable with a t-statistic of 2.11 and a p-value of .04. The OLS model also showed that average rank was a significant predictor variable with an extremely high t-statistic of 3.09 and a p-value of less than .01.

Therefore, at the 95% confidence interval, both number of premium players and average rank were significant predictors of total revenue generated for a given academic institution.

Brown and Jewell, as mentioned before, determined that the number of premium players was a significant predictor of total revenue for men's basketball in the 1995-96 season. At the 99% confidence interval, a premium men's basketball player generated over $1,000,000 of revenue in that given year. The present study indicated that a premium men's basketball player generated roughly $700,000 for his respective institution, at a slightly larger confidence interval of 95%. Both findings could be used to make the argument that these premium players are generating a significant amount of revenue; much larger than Cline's $25,000 estimate of average yearly compensation through scholarship.

The biggest difference in findings between the present study and Brown and Jewell's was that 2006-07 data showed average rank was significant predictor at the 99% confidence interval, while Brown and Jewell's 1995-96 data showed that average rank was insignificant. 2006-07 data indicated that an institution's average rank level for the season generated nearly $300,000 in revenue. Brown and Jewell's data showed that a school's average rank for the previous three seasons generated about $50,000 in revenue, but wasn't significant at any confidence interval. Therefore, more recent data shows that a team's average rank, or performance for the previous three seasons, has more weight than it used to when predicting the team's total revenues.

<u>Marginal Revenue Product (Women)</u>

Women's college basketball 2006-07 data alone yielded results much different than Brown and Jewell's data from 2000-01 in that the more recent data showed the number of premium players was not a significant predictor of a team's total revenues, where the older data showed just the opposite. The OLS model for the current study indicated that a team's number of premium players was insignificant as it yielded a t-statistic of (.47) and a p-value of .64. OLS regression for Brown and Jewell's study showed that the number of premium players was significant yielding a t-statistic greater than 3 and a p-value less than .01. Therefore, more recent data shows that the number of premium women's college basketball players is not a significant predictor of total revenue.

In terms of actual dollar amounts, the current study's OLS model shows that an additional premium player generates roughly ($50,000). Although the constant indicates a negative impact on total revenues, it holds no significance as shown by its t-statistic and p-value above. Brown and Jewell were able to determine that an additional premium player generates roughly $250,000 in revenue, which is a significant amount of money when looking at their average yearly compensation through scholarship of $25,000, as estimated by Cline. When using quantile regression, Brown and Jewell found that premium players generated more revenue at the institutions with the largest total revenues. More specifically, for the top 20% of institutions in terms of total revenues, a premium player generated roughly $400,000. This value was significant at the 99% confidence interval and is a great deal higher than the OLS regression indicated. Unfortunately, quantile regression was not used for the present study because of its complicated nature.

Average rank is the other predictor variable of concern when comparing results from the current study and Brown and Jewell's study. Brown and Jewell used RPI, a measure of a team's strength of schedule and its success against that schedule, rather than average rank as the predicting variable for their study. Their results showed that RPI was not a significant predictor of total revenue, which differs from the current study. 2006-07 data yields a constant of 73,029.47, with a t-statistic of 2.47 and a p-value of .02, indicating strong significance at the 95% confidence interval. In terms of dollar amounts, a team's average rank level generates roughly $75,000 for its respective institution. Although the predicting variables were slightly different between studies, the two are comparable as average rank is often close to a team's RPI. Therefore, the more recent data used in the present study shows that a team's number of premium players no longer generates significant revenue, and that a team's average rank is the best predictor of a team's revenue.

<u>Marginal Revenue Product (Combined)</u>

Combined men's and women's basketball data yielded results mostly consistent with men's and women's individually. OLS regression using a data set twice the size shows that both number of premium players and average rank are highly significant predictors of men's basketball revenue. Number of premium players is clearly significant as it yielded a t-statistic of 2.35 and a p-value of .02, indicating significance at the 95% confidence interval. The team's average rank yielded a t-statistic of 4.85 and a p-value less than .01, indicating significance at the 99% confidence interval. If one were to look at the results for men's and women's separately, it would make sense that the combined results look as they do.

When looking at each of the predictors in terms of dollar amounts, it appears that both number of premium players and average rank have a substantial impact. Number of men's premium players yielded a slope of 564,379.03, implying that acquiring one of these programs would generate roughly $550,000 in revenue. A team's average rank level yielded a constant of 329,848.15, implying that a one position increase in team rank has an impact of roughly $300,000 on total revenues.

The combination of data included an additional variable, gender, which allowed us to determine impact of gender on each predictor variable and arrive at coefficients for women's basketball alone. The results showed that a premium women's player had a negative impact of about $75,000 on the team's revenues. This contradicts the women's only results in that the number of premium players it was statistically significant for the combined results. The combined results also show a one ranking increase in team rank generates $90,000 in revenue. This is consistent with the women's only results and therefore reinforces it.

CONCLUSIONS

The results pertaining to the issue of professionalism, in terms of spending to profit, have similar implications to those of Sheehan's study when looking at the relationship between expenditures and revenues. It is clear that 2006-2007's expenditures and revenues indicate that men's basketball programs spend money to make profit. This is illustrated through the present study's finding that $1.57 is generated for each dollar spent by men's programs. When comparing this figure to Sheehan's finding of a $2.04 increase in revenues for every dollar spent, it appears that men's programs are making less for each dollar spent than they did before. One must keep in mind that Sheehan's study included all Division I men's programs, where the present study used only Division I programs from the major six conferences. When analyzing the women's findings, the implications are also similar to

Sheehan's. The present study indicated that a dollar spent by a women's program resulted in a $.66 increase in revenues, where Sheehan's study indicated a $.35 increase in revenues per dollar spent. Although these raw numbers are different, they both imply that women's programs do not spend to make profit. With the men's and women's data yielding much different results and implications, the combined results do not hold much worth when trying to make an argument for the professionalism of college basketball as a whole. Therefore, it can only be said that these men's basketball programs are spending to make profit, and would be labeled professional in terms of this study.

The results concerning the issue of professionalism, in terms of basketball subsidizing "other sports", cannot be compared to Sheehan's, because Sheehan only analyzed football for this particular part of his study. The analysis showed that a dollar increase in revenues for men's basketball resulted in a $.20 increase in expenditures for "other sports", but fell just outside the 90% confidence interval. This result does not allow one to conclusively imply that men's basketball subsidizes "other sports". The analysis conducted for women's data showed that a dollar increase in revenues for women's basketball resulted in a $.22 increase in expenditures for "other sports", but did not fall within a reliable confidence interval. This result implies that women's basketball does not subsidize other sports. Analysis of the combined data showed that a dollar increase in revenues for men's and women's basketball resulted in a $.20 increase in expenditures for "other sports", and was significant at the 90% confidence interval. Although the combined results would imply subsidization, with neither the men's nor women's separate data yielding significant results, the combined results do not hold much worth for the sake of arguing that college basketball overall subsidizes "other sports".

When considering all of the findings regarding professionalism, it appears that only men's basketball program are operating professionally. Men's basketball data produced significant results to imply that their incentive to spend is to make profit. In addition, men's basketball data nearly produced significant results implying that they subsidize "other sports". The combination of these two findings would should be considered grounds to argue that Division I men's basketball programs in the major six conferences are professional.

With that said, there are many that question how fairly this money is being redistributed amongst the athletic departments or institutions. The second issue examined in the present study is whether or not the athletes themselves deserve a portion. By looking at several predictors of total revenue generated for men's and women's basketball in the six major conferences (Big East, Big Ten, Big Twelve, ACC, PAC 10, and SEC), it becomes more clear as to what is actually driving these profitable sports.

When looking at men's and women's basketball separately, there is strong statistical evidence to argue that the players do in fact have a large impact on their team's total revenues. The statistical analysis explained above for men's only shows that both the number of premium players and average rank for the previous three seasons drive a team's revenues. More specifically, adding one additional premium player, or having a higher (better) rank, increases the team's revenues by $700,000 and $300,00, respectively. In addition, depending on conference, adding one additional non-premium men's player increases its team's revenues anywhere from $365,000-$690,000. These revenue drivers are directly related to the premium and non-premium players on these teams, and would imply that without them, these levels of revenue would not be achieved.

The statistical analysis explained above for women's only shows that the team's average rank for the previous three seasons drives a team's revenues. In terms of dollar amounts, having a higher (better) rank increases the team's revenues by $75,000. A team's average rank is directly related to the players' ability as well as the coaching, which would imply that without the players, a portion of this $75,000 would not be achieved. When comparing to the men's only analysis, it appears that the women's players have a much smaller impact on a team's revenues.

The statistical analysis explained above for men's and women's data combined shows that the number of premium players and the team's average rank for the previous three seasons drives a team's revenues. In terms of dollars, an additional men's or women's premium player contributes an additional $550,000 in revenue, where a higher (better) men's or women's team average rank contributes roughly $300,000 in revenue. Therefore, men's and women's basketball players combined appear to have a direct impact on their team's revenues, but only premium men's players are generating significant amounts.

The combination of the conclusions on the issues professionalism and money generation could be used as rationale for paying these premium male athletes. Men's basketball's spending in order to profit and the moderate relationship indicating signs of subsidizing "other sports" would indicate that these programs are operating professionally. With these programs being labeled as professional, it would imply that the athletes are in fact employees. Every professional organization must compensate their employees fairly, and in this case it appears that they aren't. Estimates of marginal revenue product for men's players would be one way to determine their fair level of compensation. Theoretically, these players should be receiving something reasonable in comparison to these MRP estimates.

If the NCAA were to ever address this issue, men's and women's sports would be examined separately. Solving the discrepancy between money generated and money received seems to be impossible at this point in time when considering all of the NCAA's laws that deal with amateurism. In addition, figuring out a system to compensate everyone fairly would be extremely difficult considering that premium and non-premium players are generating different amounts of money, although both generate significant amounts.

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